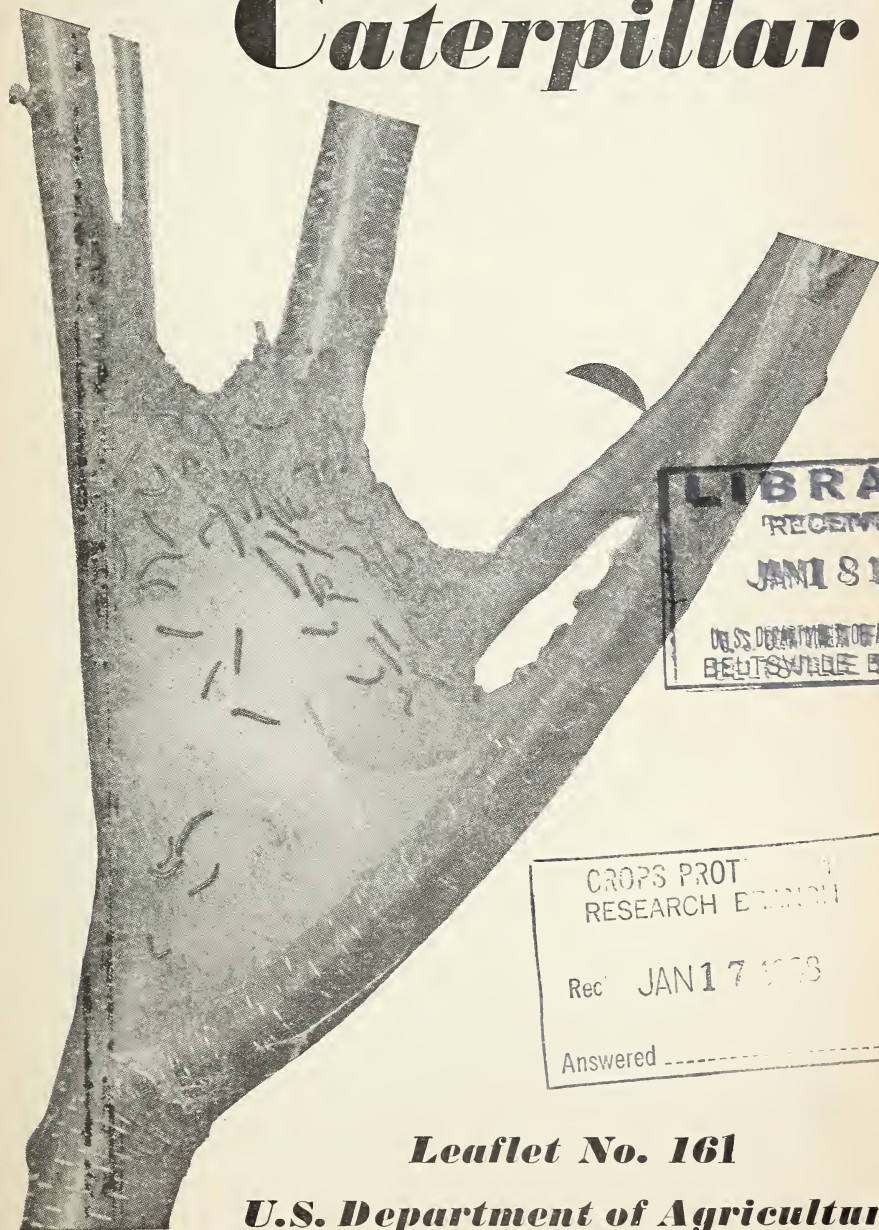


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The Eastern Tent Caterpillar



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THE EASTERN TENT CATERPILLAR

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The conspicuous, unsightly nests or tents of the eastern tent caterpillar (*Malacosoma americanum* (F.)), sometimes called the apple-tree tent caterpillar, are often seen in springtime on roadside trees or in neglected orchards. The tent is composed of layers of silky web spun by a group of caterpillars, which use the nest as a sort of apartment house.

The species is found all over the United States east of the Rocky Mountains and in limited localities in California, but is most prevalent in the Northeastern States. In the Rocky Mountains and farther west very similar species are found. The eastern tent caterpillar is native to this country, and there are records of outbreaks as far back as 1646. Sometimes the caterpillars become extremely abundant and troublesome for several years in succession, afterwards subsiding again to small numbers.

Trees Attacked

Wild cherry trees are the favorite hosts and are probably the starting points for many outbreaks. The apple seems to come next in favor, and is often attacked. Plum, peach, pear, rose, hawthorn, and various shade and forest trees are occasionally infested.

Economic Importance

The nests and caterpillars are disfiguring to roadside, orchard, or yard trees. When the caterpillars become abundant they often eat all the leaves on a tree (fig. 1), which weakens it considerably, although it seldom kills it outright. Serious annoyance is also caused by the caterpillars when they are crawling around in search of more food or a place to spin their cocoons.

Life History and Habits

The larvae, or caterpillars, hatch early in the spring, about the time the first leaves are opening, from eggs (fig. 2, A) that have passed the winter on twigs. The little caterpillars keep together and spin threads of silken web wherever they go. After feeding for about 2 days they begin their tent in a nearby crotch (cover illustration). Sometimes groups from two or more egg masses will join forces. As the caterpillars grow, the tent is enlarged and comes to consist of several layers of silk. In bad weather the caterpillars are usually in this shelter between the layers. In good weather they go out several times a day to feed on leaves, still stringing silk wherever they go. Feeding is most active in May in the latitude of New York. The caterpillars become full-grown about 6 weeks after hatching (fig. 2, B), and are then nearly 2 inches long, black, sparsely hairy, with some white and blue markings, including a white stripe along the middle of the back. If the food on the tree becomes exhausted, they leave the nest and wander in various directions in search of food.

¹ Retired.



FIGURE 1.—Wild cherry tree with nests of tent caterpillars that have devoured practically all the leaves.

When mature, the caterpillars desert the colony, if they have not already done so, and form cocoons on the bark of trees, on fences, brush, weeds, or sides of buildings, or among dead leaves or debris on the ground. The whitish-yellow cocoon is about an inch long, with a loosely constructed outer layer and a tough, parchmentlike lining. Within this cocoon the larva shrinks somewhat and transforms to a pupa. This is the resting stage (fig. 2, *C*).

Early in the summer, after about 3 weeks in the cocoons, the reddish-brown moths (fig. 2, *D*) appear and deposit eggs in bands around the twigs. The eggs are cemented together and covered by a foamy secretion which on drying becomes a firm, brown covering appearing something like an enlargement of the twig (fig. 2, *A*). Each mass contains, as a rule, about 200 eggs. During the summer the larvae develop within the eggs, but hatching does not occur until the next spring.

Thus there is only one generation a year, with larvae present late in the spring, cocoons and moths early in the summer, and only eggs present the rest of the year. There is no feeding or other injury after the caterpillars mature early in the summer, as no more appear until the next spring.

Natural Checks

A number of enemies attack the eastern tent caterpillar. The larvae are preyed upon by ground beetles and predacious sucking



FIGURE 2.—Life stages of eastern tent caterpillar: A, Eggs masses on twigs, about half natural size; B, full-grown larva or caterpillar, about natural size; C, cocoons, one opened to show pupal or resting stage, about natural size; D, adult moths (a, male; b, female), about natural size.

bugs, as well as by toads and certain birds. Several kinds of small wasplike insects develop as parasites in the eggs, larvae, or pupae of the tent caterpillar. Many caterpillars die of disease, and sometimes unfavorable weather appears to be responsible for a sudden reduction of the pest to insignificant numbers.

Insects Sometimes Mistaken for the Eastern Tent Caterpillar

The forest tent caterpillar (*Malacosoma disstria* Hbn.) has a life history and an appearance somewhat similar to those of the eastern tent caterpillar, but it has along its back a row of cream-white spots instead of a stripe. This species does not form a web. The larvae are found in groups, and more often on forest trees than on fruit trees.

The fall webworm (*Hyphantria cunea* (Drury)) forms a nest something like that of the eastern tent caterpillar. It can be distinguished from the tent caterpillar because its nest is at the tip of a branch instead of at the crotch, because it occurs from midsummer to fall, and because the caterpillars are smaller and more densely hairy. The fall webworm attacks most of the trees fed upon by the eastern tent caterpillar as well as a great variety of others.

Control of the Eastern Tent Caterpillar²

Spraying

Several effective insecticides are available for the control of the tent caterpillar. They include: DDT, lead arsenate, methoxychlor, and malathion.

² Based in part on information furnished by R. A. St. George, Forest Service.

The insecticides are available in several forms, but wettable powder formulations prepared for dilution in water are generally preferred. The insecticides should be used at the following strengths:

Insecticide	Formulation	Amount of formulation needed for—	
		100 gallons water	1 gallon water
DDT.....	50% wettable powder.....	2 pounds.....	5 level teaspoons.
Lead arsenate+.....	Powder.....	3 pounds.....	5 level teaspoons.
hydrated lime.....	do.....	3 pounds.....	6 level teaspoons.
Methoxychlor.....	50% wettable powder.....	2 pounds.....	6 level teaspoons.
Malathion.....	25% wettable powder.....	2½ pounds.....	7 level teaspoons.
	or		
	50% emulsifiable concentrate.....	1½ pints.....	1½ teaspoonfuls.

If formulations of other strengths are obtained, they should be diluted proportionately. Emulsifiable formulations and dusts can be used also. If such types of formulations are obtained, they should be used according to directions on the label. If lead arsenate is used, it will remain on the leaves longer if 1½ pints of linseed oil or fish oil are added to each 100 gallons of spray (2 teaspoonfuls per gallon). The mixture must be kept well stirred during the spraying.

The caterpillars are most readily poisoned when the tents are not more than 2 to 3 inches in diameter. If lead arsenate is used, it should be applied to the leaves around the tents. If other insecticides are used, only the tents and about 1 foot of the surrounding branches or trunk need be sprayed. It is preferable to do the spraying late in the afternoon or early in the morning when the larvae are largely confined to their tents.

PRECAUTIONS

Insecticides used improperly can be injurious to man and animals. Use them only when needed and handle them with care. Follow the directions and heed all precautions on the labels.

Keep insecticides in closed, well-labeled containers in a dry place. Store them where they will not contaminate food or feed, and where children and animals cannot reach them. Promptly dispose of empty insecticide containers; do not use for any other purpose.

When handling an insecticide, wear clean, dry clothing.

Avoid repeated or prolonged contact of insecticide with your skin.

Wear protective clothing and equipment if specified on the container label. Avoid prolonged inhalation of insecticide dusts or mists.

Avoid spilling an insecticide concentrate on your skin, and keep it out of your eyes, nose, and mouth. If you get any on your skin, wash it off immediately with soap and water. If you spill any on your clothing, remove the clothing immediately and wash the skin thoroughly. Launder the clothing before wearing it again.

After handling an insecticide, do not eat, drink, or smoke until you have washed your hands and face. Wash any exposed skin immediately after applying an insecticide.

Avoid drift of insecticide to nearby wildlife habitats, bee yards, crops, or livestock. Do not apply insecticides under conditions favoring drift from the area to be treated.

Many insecticides are highly toxic to fish and aquatic animals. Keep insecticides out of all water sources such as ponds, streams, and wells. Do not clean spraying equipment or dump excess spray material near such water.

Do not apply insecticides to plants during hours when honey bees and other pollinating insects are visiting them.

Have empty insecticide containers buried at a sanitary land-fill dump, or crush and bury them at least 18 inches deep in a level, isolated place where they will not contaminate water supplies. If you have trash-collection service, thoroughly wrap small containers in several layers of newspaper and place them in the trash can.

Do not apply DDT or lead arsenate to fruit trees within 30 days before harvest. Remove excess residues of lead arsenate at time of harvest. Do not let livestock feed on plants beneath trees treated with DDT or lead arsenate.

Do not apply malathion to apple and prune trees within 3 days, to peach trees within 7 days, or to pear trees within 1 day, before harvest.

Do not apply methoxychlor to apple, pear, or plum trees within 7 days before harvest; or to peach trees within 21 days before harvest.

Hand Method

On one or a few trees where sprays would not otherwise be applied, the tent caterpillar can be easily controlled by hand methods. So many of the insects are concentrated in a few groups that large numbers can be destroyed with only a little work. The most important hand method is destruction of the nests of caterpillars, which are easy to find. The nest may be torn out by hand, or with a brush or pole, and the caterpillars crushed on the ground. No caterpillars should be left crawling around the tree. Sometimes the nests are singed with a torch of oily rags tied to a pole, but care must be taken to avoid injuring the tree. Nests should be destroyed as soon as they are seen, before the caterpillars have had much time to feed. The egg masses on twigs can be destroyed by cutting off the twigs in winter and burning them.

Removal of Wild Cherry Trees

The wild cherry trees sustain the eastern tent caterpillar and a stock of moths, some of which scatter and deposit eggs on more useful trees. If these wild cherries, which have very little value, can be destroyed, the tent caterpillars will probably be greatly reduced in number. The wild cherry should be kept down especially in the vicinity of orchards.

Washington, D.C.



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